EXECUTIVE SUMMARY

This Response Completion Plan (RCP) reviews the selected remedies for groundwater and soil at the Defense Distribution Depot San Joaquin California Sharpe (DDJC-Sharpe) site and formulates appropriate approaches to bring the response action to completion.

Why Is an RCP Needed?

The RCP is needed for the following reasons.

- As a result of remedial activities implemented at DDJC-Sharpe since the records of decision (RODs) were finalized, a wealth of additional information has been gathered that provides a much better understanding of the contamination and its behavior in groundwater at the installation.
- The conceptual site model (CSM) has been modified to reflect changes in demographics and the quality of groundwater and surface water that are external to DDJC-Sharpe and contaminated media associated with depot activities. These changes were not considered in the ROD decisions.
- Under new (and likely future) regulatory controls governing discharge, continued operation of the existing extraction and treatment remedy will not be possible without modification and significant investment.
- The value of water and property resources is increasing rapidly and necessitates more effective resource management.

CONCEPTUAL SITE MODEL (CSM)

The CSM included in this document provides a significant update to the information that formed the basis for the remedy decisions in the two DDJC-Sharpe RODs. The CSM presents an understanding of the contaminant problems being addressed by the remedies and summarizes the condition of, and demand for, the impacted natural resources. Following are the key findings of the CSM.

- Restoration of the aquifer to beneficial use limits is not anticipated, even if the extraction wells are operated for another 30 years.
- Actions taken to date have not significantly changed the areal extent of the groundwater contaminant plumes.
- Persistent sources of volatile organic compounds (VOCs) are significantly lengthening the period of time required for restoration.
- The net effect of treating groundwater and discharging it to surface water is a transfer of naturally occurring metals from groundwater to surface water, resulting in a violation of surface water quality criteria.
- If warranted, land-use controls (LUCs) need to be documented for sites with residual contamination above cleanup goals (e.g., Sites S-26 and S-29/33).

CURRENT RESPONSE ACTION

After 17 years of operation at the South Balloon, 14 years of operation at the North Balloon, and 9 years of operation at the Central Area, it is evident that groundwater extraction, treatment, and discharge is not an effective or efficient method for managing the contaminated groundwater. The extraction and treatment systems have an average cost of $14,000 per pound of VOCs removed, and costs per pound are increasing as the annual mass removal rate decreases. Treated groundwater (1.2 million gallons per day in November 2004) containing arsenic concentrations above the new maximum contaminant level (MCL) of 10 micrograms per liter (µg/L) continues to be discharged to an irrigation district canal that is classified as a drinking water resource. Concentrations in that discharge will exceed state regulations in January 2006.

EVALUATION OF PERFORMANCE REQUIREMENTS

The mandates for resource management, Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) compliance, and applicable or relevant and appropriate requirements (ARARs) were applied in a balanced way to evaluate the existing response actions at DDJC-Sharpe. In addition to looking at the existing remedy, the evaluation of performance requirements (Section 4.0) identifies alternatives to the current remedy that could meet the

arsenic discharge requirements going into effect on 23 January 2006 and presents an alternative remedy that will provide equal or better protectiveness and superior resource management.

RECOMMENDATIONS

The findings of the RCP suggest that a ROD amendment is warranted to change the remedy for groundwater and, where appropriate, adopt land-use controls for selected soil sites at DDJC–Sharpe. The final alternative to the current groundwater remedy will be based on the best available science and treatment technologies applied to specific site conditions at DDJC-Sharpe. The alternative response will evolve as new data and proposals are implemented. Initial components of the alternative response include additional treatment technology investigations and pilot studies, connection of downgradient potable well users to the City of Lathrop water sources to preserve protectiveness, and groundwater modeling of the proposed modifications of the current groundwater remedy. The Response Completion Road Map (Plate 1 in the back sleeve) summarizes and presents a timeline for proposed DDJC-Sharpe actions that will complete groundwater remediation within the current regulatory framework. DDJC is committed to working with the agencies to develop a consensus strategy for implementing a response completion plan and ROD amendment. This strategy and amendment will account for operational experience and changing conditions in providing a more protective and cost-effective remedy.